
ZXAppeal

Feb. '86

Newsletter of the

\$ 1.50

VANCOUVER SINCLAIR USERS GROUP

*
*
* Next Meeting
*
*
* Killarny Community Centre
* 6260 Killarny st. Vanc.
*
* Feb. 14 7 PM
*
*
*

* ZXAppeal is a monthly
* newsletter put out by the
* Vancouver Sinclair Users Group.
* For more information on the
* club and ZXAppeal see the backcover
* In order to 'beat the deadline'
* material for ZXAppeal may be
* send directly to the editor
* 2308 Marine Drive
* West Vancouver, B.C.
* V7V 1K8.

Marcio Vieira 'the Pres.'
can be reached at 984-8893

In this issue:

- An Editor retires.
- The zeeper told you so.
- Marcio screens the ZX.
- Harvey has terminal QL.
- Bob talks to Portugal.
- Ken and Wilf talk and print respectively.

How to store recipes
in your home computer.
-This one's easy:



Step One:
Remove the screen
and all the microchips
and wires and stuff.



Step Two:
Insert recipes.



S
H
O
E

EDITORS PREAMBLE

First.

Yes you read it right, I am retiring as editor of ZXAppeal. I have had the job for a year now and it is time for someone else to carry the torch.

Don't worry, I am not stopping tomorrow. I will step out gradually and as far as the new editor is concerned, if you need one, I'll act as your assistant editor until you're on steam.

So.

Volunteers step forward at the Feb. 14 meeting please.

Second.

I don't usually print other people's cartoons but since the Vancouver Sun has seen fit to yank "Shoe" from the comic pages I feel it is semi OK to do it this once. I got this copy of "Shoe" from one of the 'other' newsletters, you'll be seeing more stuff from the other guys in future ZXAppeals.

I had a lot of submissions this time around which is great however I had a hard time fitting everything into this issue. Because of all this I am going to have to keep my own column short and to the point which is to bad because we had a very interesting meeting last January with lots to report. I also have several announcements to make, so here we go, telegram style where necessary.

As far as announcements are concerned. First of all its time for elections again, they are to be held at the March meeting, everybody is invited to submit nominations or to run themselves. Second, the robot guys are meeting at Al Wrights office Feb. 3rd from 6.30 to 9.30, if you have a robot or like to get involved in robotics why not drop in, you can reach Al at 681-9531.

The meeting started at 7.18 and we had about 36 members among whom I noticed some new faces.

Marcio welcomed us one and all to 1986 he told us he will take Karl Brown's robotics course and he would like some Sinclair company.

There are, apparantly, some very cheap modems to be had, from Zebra among others, this might be a good time to get yours, a chap by the name of J.Brohman is dying to sell you some of his terminal software to go with your modem.

J.B. also mentioned that you should get Wilf Rigtger,s Hires Combo pack while the getting is good, (available from D.Ross). It seems that he (J.B.) has the marketing rights, at least for the states, sown up. Also from John you can get a mouse for the ZX81 and CP/M for the 2068.

Harry Slot has been busy advertising our group in the Buy and Sell and also via the community services of CKWX and CKNW. Way to go H. Harry also set us straight on how to handle I.C.s maybe he can do up a piece for ZXAppeal on the subject. We where also told that the Candle B/W Monitor/T.V., mentioned by Marcio in his column, was seen at the Richmond Lumberland for \$79.00.

The ongoing JIL datasette story is still....ongoing. Ken Kenny is looking for customers who might be interested in getting one of these machines. If you are interested contact Ken.

I have been sort of promised a treasurers report for the next newsletter. Breathlessly waiting I am.

The name of our new club librarian is Ian Mclean, to get him started everybody is requested to bring some good public domain software to the next meeting.

Paul (The Editor) Ruiterman.

THE ZEEPER SPEAKS....

Greetings you deluded faithful,

I hope your few remaining functional brain cells are well. I think I have found the answer to your sad affliction. What else would you call a mental illness that causes normally sane individuals to purchase computers from a man who is obsessed with re-inventing the tricycle (more on that later)? During my recent trip abroad I discovered that England is also the originator of "The Hitchiker's Guide to the Galaxy" as well as "Monty Python's Flying Circus".

What has this to do with computing? An analysis of the Improbability Equation will reveal that both of these institutions actually exist in British society. It appears that Sir Clive Sinclair was the improbable result of the Heart of Gold being rear-ended by a tricycle ridden by John Cleese while under the influence of alcohol. Needless to say, Zaphod Beeblebrox was extremely upset over having his absolute favorite spaceship damaged by a drunken third cousin of Arthur Dent. Just as he was about to unleash a barrage of Betelgeuse invectives against both Cleese and the suddenly materialized Sir Clive, Marvin advised of an impending Vogon attack and the amorous desires of Trillium.



True to form Zaphod assigned the fate of Sir Clive and the Vogons to Marvin and lept through hyper-space with Trillium at the controls and Arthur Dent pondering the number 42 and the best way to deal with telephone sanitizers.

On Earth Marvin began to tell the Vogons all the reasons he was unhappy and offered to jump into the Thames for the amusement of the slowly gathering assembly of the Berkshire Mutual Admiration and Improbability Society. The Vogons having an immense fear of being bored to death immediately left for a suddenly remembered dinner engagement with Julius Caesar at Millway's, the restaurant at the end of the universe. Cleese continued on his tricycle content with the knowledge that the whole affair could have been avoided if the two-headed rude captain of the Heart of Gold had properly signaled his intention to materialize suddenly out of thin air.

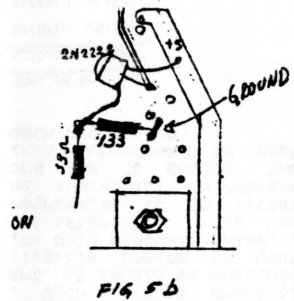
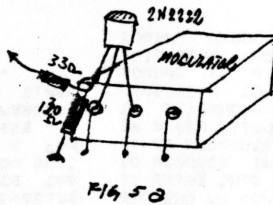
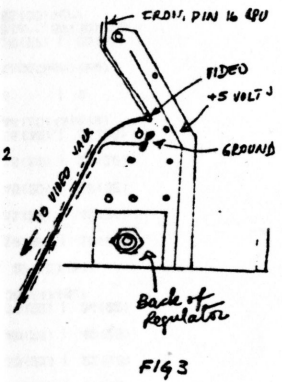
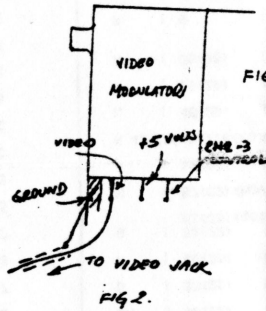
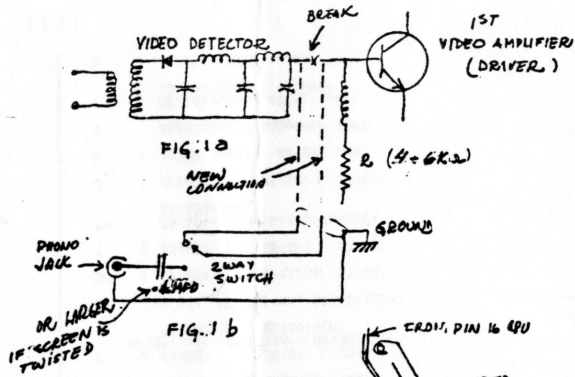
This left Marvin in charge of the improbable by-product of this incident, Sir Clive Sinclair. Marvin considered this task to be the absolutely most menial and demeaning task in the entire known Universe and typical of the treatment he had come to expect from Zaphod.

Unbeknownst to anyone except Marvin, who had a brain the size of a galaxy, the collision had caused a trans-linear non-reversing sub-ether polarized voltage spike in Marvin's EPROM banks. The result being that Marvin felt this uncontrollable urge to clone. After several massive attempts to explain the procedure and technology required to Sir Clive who was only slightly more intelligent than his third cousin Arthur Dent, Marvin finally told Sir Clive to do the best he could. The improbable result of this effort was dubbed Sinclair Research which Marvin felt was typically a human thing to do. Marvin does all the work and a human takes the credit no matter how badly they botch the job. The rest is history. Marvin begat Sinclair Research which begat the ZX 80 which begat the ZX 81 which begat the Soectrum which begat the tricycle which begat the ENEMA (oops, that's ENIGMA).

Cont next page

I TOLD YOU SO DEPARTMENT

The Zeepor warned about what would happen if the ZX 81 were connected to an automobile. I have right here in my hand the first advertisement for the C 5 in the U.S. It claims to cruise at up to 15 mph. If you weigh 98 pounds going down hill with a strong wind behind you. It gives one whole hour's charge after being charged all night. The ad claims it is simplicity itself to operate. I guess that is because you have to be simple to buy one. It claims to be an exhilarating open-air vehicle which means you get wet in the rain and you are a real easy target for pigeons, seagulls, and giant condors. It comes with a custom microcircuit which monitors the motor and battery. The son of Ferranti. It comes with auxiliary pedals. Definitely required when attempting to roll over mads of chewing gum on the sidewalk. It has pneumatic tires which means they can't be replaced anywhere in North America. You will also get two free matching mirrors courtesy Max Factor and turn signals which are recycled 5 and 8 keys from old Spectrums plus two LEDs. The steering bar is ergonomically designed to be where your hands fall naturally if you are built like a chimpanzee. It can be yours for a mere \$595.00 plus \$95.00 shipping and handling. I'm calling Ralph Nader right now.



GET A BETTER SCREEN... Marcio Vieira

If your TV gives you a good screen just enjoy it and leave it alone. Speaking for myself, a couple of years back I got tired of facing a poor screen...and decided to do some surgery to my TV set. For a change I was in luck. I had a schematic and my TV was a 120AC/120C model, one of those that you can plug into your car's cigarette lighter and watch your favourite game while you zip along Georgia St. at rush hour. Well, an AC/DC model is by design "totally" isolated from the 120 power line by a transformer. The chassis of my TV was not "HOT" as they say; an accidental short would NOT zap me and my set and my computer with the full wrath of that 120 power line. Actually, in my set, the primary of the transformer is connected to the chassis by a 1.2 megohms resistor, high enough not to give anyone any trouble. If your TV is not an AC/DC do not get depressed...yet. There is no reason why your TV should be less favoured. Check your TV schematic. Get one if you don't have one. If one side of the power line is directly connected to the chassis, leave that set alone...or get an isolating transformer. An isolating transformer is an 120/120, (input/output) transformer. The "wattage" should be enough to feed your TV, with power to spare. Two, back to back, power supply transformers, (ex: 120/24, 24/120) will also do. Now, one last WARNING. Do not mess around with either the thick wire, that is connected halfway up the back of the picture tube or with the circuits it comes from. There is some 15,000 to 25,000 volts there when the set is operating. Some capacitors are terrible efficient and able to keep electric charges for days... What we must do, for a clear picture, is to insert "direct video" (not modulated) at a point between the video detector and the video amplifier (driver). You don't have to know anything about TV's. It is all there, labelled for you in the schematic and in the PC board. In the schematic it should look, more or less, like Fig.1(a). What we want is to insert the items shown in Fig.1(b). The latest TV sets may use only chips, but you should be able to recognize the same point. The next step is to locate the same spot on the PC board.

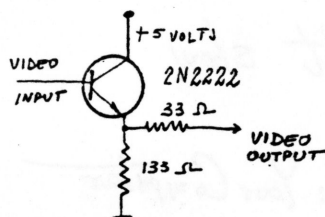


FIG 4 - MONITOR DRIVER

Break the circuit at the "X", by scratching with a small screwdriver, and using 3 twisted wires, for distances less than 3 inches, or a 2 conductor shielded cable, make the connections as shown, to a 2-way switch and a phono jack. It is advisable to pick up your ground around the same spot. When you have finished doing that, you will have a TV monitor, with a HIGH IMPEDANCE input (the resistor R at the new input is normally a few thousand ohms). Now, in the ZX-81, pick up your "direct video" at the video modulator, from the input wire closest to the edge of the PC board, with "ground" picked close by. Right on the modulator box (not the lid) is not a bad place. Depending on your TV, the video there might not be strong enough. In that case pick your video as shown in Fig.3. Be careful as a short here will damage your CPU. In both cases just take the video to an audio jack or plug, as you prefer. These modifications have worked very nicely for me for over 2 years. TV sets with chips instead of transistors, being so compact, are probably more prone to pick up interference. Extra care and very short connections are a must in all cases. If the results are not what you expected you may try a monitor driver. A monitor driver did not improve the quality of my screen, in my case. A monitor driver is necessary if you must drive a normal LOW IMPEDANCE (75 ohms) monitor, or you will overload your ZX-81. Karl Brown gave us a simple circuit in one of our very past newsletters, Fig.4. It can be put together on a transistor socket, glued to the modulator box with epoxy or as shown in Fig.5. With it, I can now drive, not only my old modified TV but also my new TV with a regular 75 ohms monitor input (CANDLE JBTU 1371/\$84.95 at COSTCO). GOOD LUCK to YOU....

light show

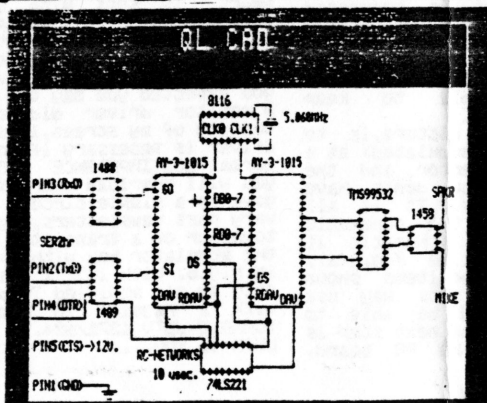
from: Your Computer

to: Squeaky

INCREASE YOUR MEMORY.... Marcio Vieira

The answer to some inquires I received (dec/85 issue) is...Yes, all pins of the 8K static chip HM6264 will fit the 28 pins as planned by SINCLAIR, with exception of pins 2 and 23. These are to be left out of the socket and connected as shown.

```
1 CLEAR 29999: BORDER 0: INK 7: PAPER 0: BRIGHT 1: CLS
10 FOR f=0 TO 113: READ a: POKE (30000+f),a: NEXT f
20 FOR f=0 TO 77: READ a: POKE (31000+f),a: NEXT f
25 PRINT AT 0,0: " PLAY MUSIC INTO THE EAR PHONE "; AT 1,5:"AS IF YOU ARE LOA
DING": PRINT AT 21,0: FLASH !!" PRESS ANY KEY ": PAUSE 0: CLS
27 RANDOMIZE USR 31000
30 DATA 33,15,88,6,11,197,84,93,19,6,16,205,106,117,203,191,203,159,203,167,20
3,175
40 DATA 119,18,43,19,16,239,62,48,35,61,32,252,193,16,224,1,96,1,33,0,88,17
50-DATA 191,90,126,18,27,35,11,120,177,254,0,32,245,201,14,0,219,254,203,119,4
0,4
60 DATA 203,193,24,2,203,129,219,254,203,119,40,4,203,201,24,2,203,137,219,254
,203,119
70 DATA 40,4,203,209,24,2,203,145,219,254,203,119,40,4,203,119,40,4,203,241,24
,2,203,119,121,201
80 DATA 0,127,127,127,127,127,127,0,17,88,255,33,24,121,1,8,0,237,176,62,2,205
90 DATA 1,22,62,1,237,163,33,255,87,17,0,88,1,191,2,62,0,119,1,192,2,62
100 DATA 144,215,11,120,177,194,67,121,1,9,0,118,11,120,177,194,79,121,58,8,92,
254
110 DATA 32,202,100,121,205,48,117,195,76,121,201,201
200 STOP : SAVE "light show"
210 VERIFY **
```



PLAYING WITH ELECTRICITY [# X+1] - { Harvey Taylor }
THE SERIAL PROBLEM - A CONTINUING SAGA

There is a problem with the serial ports on the QL. Sinclair calls them full, bidirectional RS-232 interfaces & one would hope that meant everything it is supposed to, but Sinclair cheapness has struck a low blow. Instead of doing the proper thing and using a full Uart, Sinclair uses the 8049 Intelligent Peripheral Controller (IPC) for input and part of a custom Undifferentiated Logic Array (ULA) for output. The problem arises from the fact that the 8049 has a lot to do & cannot watch the input line all the time. It is liable to miss characters. To get around this Sinclair has implemented the DTR pin; when the 8049 is busy it pulls DTR low. Any hardware wishing to talk to the QL has to monitor DTR. Most modems are not set up to do this. Consequently most modems show a lot of errors. A further problem arises from the fact that, while parity and baud rate are under program control, the number of stop bits is not. The QL always uses 2 stop bits. Most North American BBS's use 1 stop bit. These factors make it difficult to set up any of the simpler kinds of modems, such as Steve Ciarcia's TMS99532 based project.

My reason for writing this article is to search out any solutions other people have tried in trying to circumvent these limitations. If you have got a modem working with a QL with any degree of success, please drop me a line.

This is a brief description of what I have tried myself. My first attempt was to simply to "stick an ultra simple TMS99532 modem on the serial ports. This resulted in such a high level of errors in reception and transmission that I was unable to log onto any local BBS. (Sigh)

My second attempt was to design a slightly more complicated modem incorporating (2) two Uarts. One Uart was set to 2 stop bits and 300 baud like the QL, the other set to the parameters of whatever BBS I was communicating with. Once data was available on one Uart, the data available pin would go high, which triggered a one shot to strobe the write pin on the other Uart as well as clearing the Data available flip flop on the first. The result of this project was scarcely better than the first. I was still unable to log onto any BBS.

My third attempt was to utilize the DTR line as well as the Data Available pin on the second Uart to strobe the Data into the first Uart which ran at 9600 baud. The effect of this is to use the second Uart as a one byte buffer. Surprisingly this shortcut method works to a degree. Now however the original board is so hacked up that I will have to build another. My present board has a problem with its power supply & I want to try direct connect. This may be all which is keeping me from BBS land. As the present device is it is too unreliable to implement Xmodem.

It would seem that the next level would be to design a smart buffered modem which is capable of monitoring the DTR line on the QL. This will involve an extensive project with a dedicated controller chip like a Z8 or suchlike. I have not yet started work on this sort of a device. Coincidentally the two QL modems for sale in Britain incorporate a form of buffering between the modem and the QL.

Let me repeat my plea. If you have found another way around this conundrum, drop me a line, please! { H. Taylor/ QL Conundrums/ 726 West 17th/ Vancouver, BC/ Canada V5Z 1T9 }

The circuit diagram is the latest semi-buffered design described above & the code is the simple terminal I have been using.

PORTUGAL CALLING
by R. Lussier

On December 27, 1985 at approximately 7:15 A.M. I received an Overseas phone-call from the Portugal (TIMEX) Corporation on the idea of our group obtaining some of the TC 2068 and Timex Disk-Drive units.

During the conversation the prices were quoted as:

- (1) TC 2068 at U.S.\$105
- (2) Timex Disk-Drive at U.S.\$169

These quotations are stated for a minimum amount of 20 units of each product. I will write the above again and get everything in black & white, just to be sure there was no misleading statements on the part of TIMEX Portugal. When I get an answer I will let you all know what is going on. To be continued - - -!

GOOD 'MODEM' DEAL

by R. Lussier

2050 Modem Cards

This is a great deal for those interested in obtaining a Modem for their computer at approximately 1/4 the usual price.

These are the Timex 2050 Cards with Interface connector & Phone Line Cord at U.S.\$25.00. All you have to supply is the 90 power supply, a case from Radio Shack and the MTERM-II software which can be obtained almost anywhere. Each of these units is tested before shipment & include the instructions on how to put it all together. This company also include a 10 day exchange policy on these units. This unit can also be used on the T/S 1000 & T/S 1500 using the MINI-X MODEM software.

If you are interested in adding one of these units to your computer set-up then write and ask for more information to:

Dave Clifford,
13910 Halldale Ave.,
Gardena, CA 90249
U.S.A.

This is rated as one very good buy and I would say fairly hard to beat.

The QL Section

by R. Lussier

For anyone interested in obtaining a QL Joystick Adapter at £5.50 + Post may do so from:

Eidersoft,
The Office,
Hall Farm,
Near Ockenden,
Upminster,
Essex RM14 3QH,
England

A listing of QL software can be obtained from:

WD Software,
Hilltop,
St. Mary,
Jersey, England

A 100% m/c arcade action game called the "BLOBZ" for a QL @ £5.00 inc Post from:

Smiling Software,
26 Dale Road,
Harple,
Stockport SK5 6HA,
England

QL Graphics Toolkit

by R. Lussier

The techniques of this new toolkit are similar to those used by Walt Disney to create the new movie "TRON". You can experiment with Fractals. This is the replication of natural shapes to form Landscapes, rock formations and buildings.

This is the system used to make the program "Landscape Creator". This Listing was done by a professional programming team and took two months to complete.

If you have a QL and would be interested in a photocopy of the Listing for this program, then write me or phone me at the following: PHONE-522-7015 and the address is: 7937 Elwell St., Burnaby, B.C. V5E 1M3. I will get a photocopy of this program to you. Good computing!

BRITISH SOFTWARE PUBLISHERS

by R. Lussier

LERM, 10 Brunswick Gardens, Corby Northamptonshire, England

Level Nine, 229 Hugenden Road, High Wycombe, Buckinghamshire, HP13 5PG, England (adventures)

Macmillan Software, 4 Little Essex Street, London WC2R 3LF, ENG (educational & Astronomy prog.)

Mastervision, Park Lorne, 111 Park Road, London NW8 7HL, Eng. (budget software, all kinds)

OCP, 77a Packhorse Rd., Gerrards Cross, Buckinghamshire SL9 8PD, Eng. (Utilities) rated highly

Rose Software, 148 Widney Lane, Solihull, W. Midlands, England (educational)

SD Microsystems, PO Box 24, Hitchin, Hertfordshire SG4 0AE, Eng (utilities)

Software Farm, 3rd Floor, 15 Charlotte St., London W1, Eng. (ZX81, TS1000/TS1500 software)

PSION, 2 Huntsworth Mews, Gloucester Place, London NW1, Eng. (various software)

SPECTRUM SOFTWARE REVIEW

by R. Lussier

NEW: 2068 BOOK

by R. Lussier

MACADAM BUMPER

This program is a PINBALL CONSTRUCTION kit. It comes with a Sample game with three pairs of Flippers. You can construct your own tables using all traditional parts such as bumpers, & Flippers, Floats and even with the inclusion of TILT.

There are two construction modes. The first alters the now existing table and the second will allow you to start from a blank table and design one completely of your own design. This is like having a new game each time. This does save you from getting bored of the game.

When entering the design phase the left side of the display shows each type of component together with a letter. To position a piece on the table, just move the Cursor to the desired location and press the appropriate letter. You can then save this table to tape.

This game will play up to 4 players and each game uses five balls per play. Comparing this program with the other Pinball Game "PINBALL WIZARD", I find it more addictive and much more fun as you can have a different game each time. You design, save the new table and load a new table into the game whenever you wish.

GRAPHICS: 98%
 MONEY VALUE: 90%
 ADDICTIVENESS: 95%
 SOUND: 70%
 OVERALL: 89%
 PRICE: 27.00 inc. Postage

Available from:

Soft Insight,
 17 Burgos Grove,
 Greenwich, SE10 800,
 England

30 MUSIC PROGRAMS T/S 2068

This is a good music programs book with 139 spiral-bound pages. These programs are also available on tape. Altogether 5 tapes are available each with 30 songs.

Some songs use the BEEP and some use the SOUND commands. A few of the songs include: Love Me Tender, O Sole Mio, Blue Danube, Saints Go Marching in, and 26 others.

The book is in 3 parts. The first 2 contain the BEEP command and the third contains the SOUND command. A special feature for Guitar accompaniment is that the Chords are displayed on Screen.

Another feature are Music Boxes in which you enter the one program and enter the DATA from each program. You then select a song of your choice. This saves a lot of typing. A very good and unique idea.

The price of the book is at U.S. \$15.00 including shipping, and available from the E. Arthur Brown Co., 3404 Pawnee Drive, Alexandria, MN 56308.

There are 5 Tapes of 30 programs each and are priced at \$12 each from Electret Scientific, PO Box 4132, Star City, WU 26505
 Book Rating: 85% .

UNUSUAL SPECTRUM PROGRAMS

by R. Lussier

WITCHCRAFT REVEALED

This program lets you perform many different rituals and spells collected from authentic witches and Warlocks. Some spell include: Binding Sex Spell, Love Spell, Spell for Extremely Good Luck, and Astral Projection, etc. There are over 25 spells in this program. If interested it is now available at £6.50 inc. Post. High Voltage, 15 Bridge Road, Park Gate, Hants SO3 7AE, Eng.

ASTROLOGY for Beginners

This program is used to calculate a Horoscope. This package includes a simple program, the introductory booklet, and 2 self teaching programs on how to interpret the horoscope. This program is £13.00 inc. Post. Available from: ASTROCALC, 67 Peascroft Road, Hemel Hempstead, Herts HP3 6ER, England.

MAGIC

This package includes a booklet showing the history of MAGIC with some tricks, and the software you need to produce a show. If interested in the practical side of Magic you will enjoy this program. Price: £10.00/ Post. Macmillan Software, 4 Little Essex St., London WC2R 3LF, England

CALLING-Adventurers

by R. Lussier

There are members that are interested in starting a new arm of the group - basically the ADVENTURE group.

Anyone interested in Adventure games such as the HOBBIT, Lords of Midnight, etc. & like to get together to participate with and against each other on the games including possibly on building Maps of these games, please get in touch with:-

Bill Rutter @ 434-8367 or
5361 Rumble Ave.,
Burnaby, B.C.
V5J 2B7

Doug Jeffery,
Larch Rd., RR#1,
Telkwa, B.C.
V0J 2X0

Crossword Compiler

This program lets you design your own Crosswords and Save to tape or Printer. You can design any size grid up to 16 squares, and also enter and delete black squares. You can also redesign old crosswords. The price is at £5.50 inc. Post. Byron Software, 57 Rangoon Road, Solihull, West Midlands B92 9DD, England.

Building Estimators

This program is for preparation of tenders. It has many facilities including extract components, adjust, preparation of measurements, etc. The price is: SAE for details. A. MacDonald, 8 Loch Place, South Queensferry, Lothian, U.K.

SUSP_JOB

* CON CHAN ID
* TIMEOUT

* NOT COMPLETE

* F1=EXIT

eg. F2,F3 etc.

* NOT COMPLETE

* ONLY EF=-10?

* IS THIS THE TIMEOUT TO USE?
* SER CHAN ID

* CON CHAN ID

* D1 PRESERVED FOR SENDIT

* SAVE ERROR CODE
* OPEN ERROR SCREEN

* REPORT ERROR
* CLOSE ERROR CHANNEL

```

MOVEQ #THIS_JOB,D1
MOVEQ #-1,D3 * INDEFINITE TIMEOUT
MOVE L #0,A1 * NO FLAG BYTE
QDOS MT_SUSJB,1

MOVEQ #0,D1
QDOS MT_RELJB,1 * RELEASE BASIC
MOVEQ #0,D0 * INSURANCE
RTS

*
MSG1 DC.B ' QL TERMINAL'
MSG1END
MSG1LEN EQU MSG1END-MSG1
CNOP 0,4
MSG2 DC.B ' OFFLINE '
MSG2END
MSG2LEN EQU MSG2END-MSG2
CNOP 0,4

*
CHAN_SCR DS.L 1
CHAN_SER DS.L 1

SCR_PAR DC.B 1
DC.B 2
DC.B 0
DC.B 4
DC.W 360
DC.W 14
DC.W 76
DC.W 0

WIN_BLK CNOP 0,4
DC.B 2
DC.B 2
DC.B 0
DC.B 4
DC.W 480
DC.W 212
DC.W 16
DC.W 16
DC.W 128
CNOP 0,4

CON_PAR DC.B 2
DC.B 2
DC.B 0
DC.B 4
DC.W 480
DC.W 212
DC.W 16
DC.W 16
DC.W 128
CNOP 0,4

SCR_ERR DC.B 4
DC.B 1
DC.B 0
DC.B 2
DC.W 480
DC.W 24
DC.W 16
DC.W 232
CNOP 0,4

DEVNAME DC.W 6
DC.B 'SER2'
DC.B 'h'
DC.B 'r'
CNOP 0,4

END

```

* BRDR COLOR
* BRDR WDTN
* PAPER COLOR
* INK
* WIDTH
* DEPTH
* X-ORIGIN
* Y-ORIGIN

* BUFFER LENGTH

SPO 256 SPEECH SYNTHESIS MADE EASY

by Ken Abramson

The SPO 256-AL2 speech processor chip may not have the most human-sounding voice, but its low cost (approx. \$10) and its simple electronic construction circuitry make it a natural for do-it-yourself computer interfacing projects or robot voice boxes. Once the hardware has been built, however, you must either acquire the equivalent of a Phd degree in linguistics in order to make use of the allophone programming documentation, or depend on the time-consuming method of trial and error.

The chart below attempts to organize the SPO 256 allophones into vowel sounds and consonant sounds. The consonant sounds are further subdivided into consonants found at the BEGINNING, MIDDLE, and END of words. With a little practice in using this chart, it should be possible to produce intelligible speech on your first attempt, with only minimal changing of a few allophones after that. The key to allophone programming is to listen carefully to the individual different sounds in a word and to choose the allophones that best correspond to each sound. Happy speech processing!

VOWEL	ALLOPHONE	DEC	HEX	ALLOPHONE VALUE (Hex in brackets)			
A:	a (hat)	126	1A	CONSONANT	BEGINNING	MIDDLE	ENDING
	a (ate)	120	14				
	air (hair)	147	2F	B	63(3F)	63(3F)	28(1C)
	ar (far)	159	3B	C 42(2A)	(ca), 8(co)	41(29)	41(29)
	augh (caught)	123	17	CH	50(32)	50(32)	50(32)
	aw (hot)	124	18	D	33(21)	33(22)	21(15)
E:	e (set)	107	07	F	40(28)	40(28)	40(28)
	e (meet)	119	13	G	34(22)	34(22) 34(22)	61(3D) (go), 36(24) (gi)
	er (letter)	151	33	H	57(39) (how), 27(1B) (he)		
I:	ear (hear)	160	3C	J	10(0A)	10(0A)	10(0A)
	i (hit)	112	0C	K 42(2A)	(ka), 8(ko)	41(29)	41(29)
O:	i (light)	106	06	L	45(2D)	45(2D)	62(3E)
	o (mode)	153	35	M	16(10)	16(10)	16(10)
	o (ought)	123	17	N	56(38)	56(38) 11(0B)	44(2C) (angle)
	oo (book)	130	1E	P	9	9	9
	oo (moon)	131	1F	Q	41+46(29+2E together) (kw)		
	oo (to)	122	16	R	14(0E)	39(27) 52(34)	47(2F) (air), 59(3B) (ar), 60(3C) (ear), 58(3A) (or), 51(33) (er)
U:	or (more)	156	3A	S	55(37), 43(2B) (z), 38(26) (zsh)		
	ow (out)	132	20	SH	37(25), 38(26) (zsh)	37(25)	
	oy (boy)	105	05	T	13(00)	13(00)	17(11)
	u (bus)	115	0F	TH	29(1D) (thin), 54(36) (those)	13(12) (this)	
Y:	u (value)	49+31	31+1F	U	35(23)	35(23)	35(23)
	oo (moon)	131	1F	W	45(2E) (wool), 48(30) (why)		
	y (sky)	106	06	X	41+55(29+37 together) (ks)		
	y (yes)	149	31	Y	25(19) (yam), 49(31) (yes)	19(13) (truly), 6(sky)	
ee (truly)	119	13	Z	43(2B), 38(26) (zsh)			
y (yard)	125	19					

ANATOMY of a HIRES HARDCOPY
UTILITY FOR TS2040 PRINTERS

Owners of 2040 printers may be surprised to find that the old ZX printer docs included a minitutorial on, and demo programs for, hires printing, a subject totally ignored in the 2040 manual.

The power of graphics printing and similar utilities is exemplified by programs such as SYNCARTIST, USII and I am sure some of your own programs.

I include USII because of its use of compressed character bit patterns, which allows printing of 42 characters per line.

An extension of this technique would generate a choice of styles or custom characters.

A program that dumps X x Y bits to the printer is the core of all such utilities.

The M1 program in listing 1 is I believe the most compact form of this core utility and requires just 52 bytes to store 28 instructions.

The program may be located anywhere in memory and can dump any part of memory, in 6K byte chunks, to the printer in a 256x192 bitmapped format.

The program consists of 3 nested loops which handle the bit, byte, and line segments.

HCLP3, the start of the inner loop checks if the printer is ready for data, loads reg B with the number of bits per byte to be printed and loops until reg B decrements to 0.

The middle loop HCLP2 passes bytes, fetched via reg HL to reg C of the inner loop.

This loop also tracks the number of 8 bit bytes send to the printer by decrementing reg D.

After 32 bytes control is transferred to the outer loop which counts the number of lines by decrementing E and loops back to HCLP1 until all 192 lines are processed.

At the beginning of the outer loop, the printer is checked if it is ready for a new line.

Further details of operation are found in the line by line annotation of listing 1.

Like the hands of a clock the second hand rotates 8x for every rotation of the minute hand and the minute hand rotates 32x for every rotation of the hour hand and the clock stops after 192 rotations of the hour hand.

Luckily it does not require 96 days for all 46772 inner loopings but only a few seconds. In fact with no printer attached, the routine takes only 2 seconds.

Slowed by the handshake ready signals which synchronize the computer with the printer, it takes 10 seconds.

The starting parameters in registers HL, D, E, and B may be adjusted but keep in mind that the horizontal printer resolution is only 256 dots, that is, 32 bytes of 8 bits, 42 bytes of 6 bits, or 51 bytes of 5 bits, etc.

Vertical resolution is limited to 256 lines or by placing this routine in an outer outer loop, by the length of the paper roll.

By sheer coincidence this routine is fully compatible with WRX16 SOFTWARE HIRES and is one of many supporting utilities provided in the WRX16 Development Package.

For details, questions, and suggestions please contact myself, WILF RIGTER or DAVE ROSS.

HCOPY

```
CALL F23;FAST
LD E,C0;192 LINES
LD HL,(SCNAD);6K ARRAY
XOR A;A=0
OUT FB,A;START PRINTER
HCLP1 IN A,FB;TEST PRINTER
RLA;NEW LINE STATUS FLAG
JR NC HCLP1;REPEAT IF NC
LD D,20;32 BYTES PER LINE
LD B,8;8 BITS PER BYTE
LD C,(HL);GET BYTE
HCLP3 IN A,FB;TEST PRINTER
RAA;DATA READY FLAG
JR NC HCLP3;REPEAT IF NC
LD A,C;TRANSFER BYTE
AND 80;MASK BIT 7
OUT FB,A;BIT 7 TO PRNTR
RL C;SHIFT NEXT BIT
DJNZ HCLP3;REPEAT 8X
INC HL;NEXT BYTE
DEC D;DEC BYTE COUNTER
JR NZ HCLP2;REPEAT 32X
DEC E;DEC LINE COUNTER
JR NZ HCLP1;REPEAT 192X
LD A,4;TURN OFF
OUT FB,A;PRINTER
CALL F2B;SLOW
RET;BYE
```

Vancouver Sinclair Users Group,
P.O. Box 788,
New Westminster,
B.C. V3L 4Z8.



MAIL TO:

The Vancouver Sinclair Users Group has been in existence since 1982. We are a support group for the owners and users of the, Microace, ZX 80, ZX 81, T/S 1000, T/S 1500, Spectrum+ T/S 2068 and QL computers.

Our 1985 executive consists of,

President Marcio Vieira

V.P./Coordinator Erik Sakara

Treasurer ARBie Fru

Our Membership dues are only \$15.-/year and may be send to our Treasurer.

ARBie Fru

7220 Blundell Rd

Richmond. B.C.

V6Y 1J4.

Membership includes a subscription to ZXAppeal our monthly newsletter. ZXAppeal accepts advertising, our =PREPAID= rates are,

\$ 40.- per page.

\$ 20.- per 1/2 page.

\$ 10.- per 1/4 page.

We charge one dollar extra for billing.

ZXAppeal has a print run of 100 copies per month and is distributed to our members together with approx. 75 other Sinclair usergroups throughout North America who receive a photocopy, via The Network.

Our Canadian Network coordinator is,

Rod Humphreys,

2006 Highview Place,

Port Moody B.C. V3H 1N5

Our Internat. Network coordinator is,

Bob Lussier,

7937 Elwell Street,

Burnaby B.C. V5E 1M3